San - Refuse
St. Louis Co.
West Lake Land

ENGINEERING GEOLOGIC REPORT OF THE WEST LAKE QUARRY LANDFILL SITE

St. Louis County, Missouri

Bounded on the south by Old St. Charles Rock Road and on the east by Taussig Road, on the Missouri River floodplain, T.46N., R.6E., St. Charles Quadrangle.

The proposed landfill, adjacent to existing landfills, is near the bluff line of the Missouri River in a fill area composed of soil material from the quarry immediately to the east. Floodplain elevation is assumed to be approximately elevation 440 as estimated from topographic maps and elevation of material encountered in the test borings that appeared to be natural undisturbed material. Although water level measurements were not included in the report, the water table is estimated to be at or just below elevation 440.

Numerous test borings in the fill material indicate that the spoil pile is composed principally of clay and silt with an admixture of limestone fragments and other debris. No soil tests for classification, etc., appear in the report, but from field description, the material appears to be of a plastic nature and could be rendered impermeable by reexcavation and compaction. Zonation of some of the coarse grain materials, i.e., limestone fragments and blocks, will be disturbed during normal excavation and should not present a lateral permeability problem.

To prevent contamination of alluvial water, as experienced in the landfills to the north-northwest, it is recommended that:

1) No excavation be made below elevation 440± or the elevation of original ground line. The moist, medium, dark gray clay encountered in numerous holes at approximately 20 feet below the surface would make a relatively impermeable barrier to the vertical percolation of leachate. Because this zone will not be continuous, it is recommended that it be used as a base level for excavation with at least a two foot pad overlying this zone.

Excavation to elevation 430, according to plan, would put the landfill at or within the groundwater table in the alluvium in this area. Padding of the bottom and sides of these trenches probably would not be feasible because of water conditions and any failure of the pad could result in the contamination of the surrounding alluvial water.

In summary, the fill material in the proposed landfill area appears to be of a plastic nature and should provide adequate cover and padding material in a landfill operation. Recommendations include keeping the bottom of the landfill at or above existing floodplain elevation.

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